

**AMENDMENTS TO THE DRAWINGS**

Figure 2 has been amended to: (a) remove reference numbers “63” and “104”, which were not discussed in the specification; and (b) to replace overlaid italicized/non-italicized reference numbers “1” with a singular italicized “1”.

### REMARKS

Applicant requests favorable reconsideration of this application in view of the foregoing amendments and the following remarks. Of claims 1-10, which were pending in the application, claims 1, 2, and 4-10 were rejected in the Office Action. By way of this amendment, Applicant has: (a) amended claims 4, 7, and 10; and (b) cancelled claims 1, 2, 5, 6, 8, and 9, without prejudice or disclaimer. Accordingly, claims 4, 7, and 10 are respectfully presented for further consideration, with claim 3 remaining withdrawn from consideration.

#### **1. Information Disclosure Statements**

Applicant appreciates the indication (by way of Examiner initials) that the Examiner considered each of the references listed on the Form PTO/SB/08 submitted with the Information Disclosure Statement filed on November 5, 2004. In addition, Applicant respectfully requests an indication that the Examiner similarly considered (by way of Examiner initials) each of the references listed on the Form PTO/SB/08 submitted with the Information Disclosure Statement filed on February 5, 2004.

#### **2. Objections to the Specification**

The Examiner objected to the specification for various formalistic reasons, each of which has been fully obviated by way of the amendments made herein to the specification. Accordingly, a withdrawal of the objection to the specification is both warranted and earnestly solicited.

#### **3. Rejections of the Claims**

##### **A. Rejection of Claims 4, 7, and 10 under 35 U.S.C. § 112, ¶ 2**

The Examiner rejected claims 4, 7, and 10 under 35 U.S.C. § 112, ¶ 2 as a result of an antecedent basis issue present in each of these claims. Applicant respectfully submits that the antecedent basis issue in claims 4, 7, and 10 has been fully obviated by way of the amendments made herein to these claims. Accordingly, a withdrawal of the rejection of claims 4, 7, and 10 under § 112 is both warranted and earnestly solicited.

##### **B. Rejection of Claims 1, 2, and 4-10 under 35 U.S.C. § 103(a)**

The Examiner rejected claims 1, 2, and 4-10 under 35 U.S.C. § 103(a) as allegedly being obvious when considering U.S. Patent No. 4,582,185 ("Grimes") in view of JP 4-203560 ("Oba"). Preliminary, this rejection is now moot with respect to claims 1, 2, 5, 6, 8, and 9, each of which has been canceled herein, without prejudice or disclaimer.

Accordingly, this rejection will be addressed, and respectfully traversed, with respect to claims 4, 7, and 10.

As amended, claim 4 recites a system for controlling a hydraulic pressure of an automatic transmission. The system includes, among other possible things (*italic emphasis added*):

- a torque converter comprising a lockup clutch, the lockup clutch carrying out direct coupling between an engine and the transmission;
- a lockup solenoid valve that provides a signal pressure for controlling engagement of the lockup clutch;
- a lockup control valve that provides an engagement pressure to the lockup clutch in accordance with the signal pressure, the lockup control valve comprising a spool; and
- a control unit that controls the lockup solenoid valve, the control unit being programmed *to control the signal pressure to hold the engagement of the lockup clutch with the spool of the lockup control valve being stationary in an axially movable position between two fully biased positions.*

Similarly, amended claim 7 recites an automatic transmission that includes, among other possible things (*italic emphasis added*):

- a torque converter comprising a lockup clutch, the lockup clutch carrying out direct coupling between an engine and the transmission;
- a lockup solenoid valve that provides a signal pressure for controlling engagement of the lockup clutch;
- a lockup control valve that provides an engagement pressure to the lockup clutch in accordance with the signal pressure, the lockup control valve comprising a spool; and
- a control unit that controls the lockup solenoid valve, the control unit being programmed *to control the signal pressure to hold the engagement of the lockup clutch with the spool of the lockup control valve being stationary in an axially movable position between two fully biased positions.*

Moreover, amended claim 10 similarly recites a method of controlling a hydraulic pressure of an automatic transmission, which transmission includes, among other possible things: (a) a torque converter comprising a lockup clutch, the lockup clutch carrying out direct coupling between an engine and the transmission; (b) a lockup solenoid valve that provides a signal pressure for controlling engagement of the lockup clutch; and (c) a lockup control valve that provides an engagement pressure to the lockup clutch in accordance with the signal pressure, the lockup control valve comprising a spool. This method includes, among other possible steps (*italic emphasis added*):

- controlling the signal pressure to hold the engagement of the lockup clutch with the spool of the lockup control valve being stationary in an axially movable position between two fully biased positions.*

As hereafter explained, Grimes and Oba (standing alone or combined) fail to teach or suggest: (a) the system recited in claim 4; (b) the automatic transmission recited in claim 7; and (c) the method recited in claim 10.

As Grimes' torque converter clutch 50 is either engaged or disengaged by spool 82 (*see* Fig. 1; col. 4, line 48 – col. 5, line 41), the Examiner acknowledges that it “is unclear whether the Grimes *et al.* device determines a torque provided to the torque converter and controls the signal pressure in accordance with the torque.” To cure this deficiency, the Examiner relies on Oba, which teaches a lockup clutch control in which, the Examiner asserts, “a signal value corresponding to engine torque (*i.e.*, the torque provided to the torque converter) is determined and used to control engagement pressure of the lockup clutch such that it basically corresponds to the engine torque.” Although this reading of Oba may be accurate, it is clear that Oba fails to teach or suggest that a spool of the lockup control valve may be stationary while being “in an axially movable position between two fully biased positions.”

In contrast to the shortcomings of Grimes and Oba, an embodiment of the instant invention, which is shown in FIGS. 5A/5B, includes a spool 120 that, depending on the amount of torque, may be maintained in a “balanced state.” *See* ¶ [0055]. As a result, “the spool 120 can be moved rightward or leftward as viewed in FIGS. 5A and 5B in accordance with [a] surging [of signal pressure], *i.e.*, it can absorb the surging, resulting in achievement of the control stability of the lockup clutch.” *See* ¶ [0056].


As the combination of Grimes and Oba fails to teach or suggest the control limitation recited in claims 4, 7, and 10, the combination of these references can not be used to reject these claims under 35 U.S.C. § 103(a). Accordingly, a withdrawal of the rejection of claims 4, 7, and 10 under § 103(a) is both warranted and earnestly solicited.

**CONCLUSION**

For the aforementioned reasons, claims 4, 7, and 10 are now in condition for allowance. A Notice of Allowance at an early date is respectfully requested. The Examiner is invited to contact the undersigned if such communication would expedite the prosecution of the application.

Respectfully submitted,

Date MAY 23 2005

By 

Customer Number: 22428

FOLEY & LARDNER LLP

3000 K Street, N.W.

Suite 500

Washington, D.C. 20007-5143

Pavan K. Agarwal

Registration No. 40,888

Frederic T. Tenney

Registration No. 47,131

Telephone: (202) 672-5300

Facsimile: (202) 672-5399

Attorneys for Applicant

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED REGARDING THIS APPLICATION UNDER 37 C.F.R. §§ 1.16-1.17, OR CREDIT ANY OVERPAYMENT, TO DEPOSIT ACCOUNT NO. 19-0741. SHOULD NO PROPER PAYMENT BE ENCLOSED HERewith, AS BY A CHECK BEING IN THE WRONG AMOUNT, UNSIGNED, POST-DATED, OTHERWISE IMPROPER OR INFORMAL OR EVEN ENTIRELY MISSING, THE COMMISSIONER IS AUTHORIZED TO CHARGE THE UNPAID AMOUNT TO DEPOSIT ACCOUNT NO. 19-0741. IF ANY EXTENSIONS OF TIME ARE NEEDED FOR TIMELY ACCEPTANCE OF PAPERS SUBMITTED HERewith, APPLICANT HEREBY PETITIONS FOR SUCH EXTENSION UNDER 37 C.F.R. § 1.136 AND AUTHORIZES PAYMENT OF ANY SUCH EXTENSIONS FEES TO DEPOSIT ACCOUNT NO. 19-0741.